Office of Research and Education Accountability

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Legislative Brief

Mapping International Assessments

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Key Points

The U.S. regularly participates in three major international assessments: PIRLS, TIMSS, and PISA. This brief focuses on these three assessments and results from the most recent assessment cycle for which data have been released. It is important to note that average scores and rankings, without accompanying context, should not be considered overall measures of the quality of an education system. With that acknowledgement, this brief seeks to provide basic facts about each assessment as well as information on U.S. performance, how Tennessee fits into the international assessment framework, and what else the assessments demonstrate about education in the U.S.

What are the quick facts? PIRLS, which is run by the International Association for the Evaluation of Educational Achievement (IEA), tests 4th graders in reading every five years, and the most recent cycle from 2011 tested samples of students from 45 education systems (countries and subnational entities, such as cities) and one U.S. state. TIMSS, also run by the IEA, tests 4th graders in math and science every four years, and the most recent cycle from 2011 tested samples of students from 50 education systems and two U.S. states. TIMSS also tests 8th graders in math and science every four years, and the most recent cycle from 2011 tested samples of students from 42 education systems and nine U.S. states. PISA, which is run by the Organization for Economic Cooperation and Development (OECD), tests 15-year-olds in math, reading, and science every three years, and the most recent cycle from 2012 tested samples of students from 65 education systems and three U.S. states.

How does the U.S. do? On PIRLS and TIMSS, average student achievement in the U.S. tends to be above the PIRLS and TIMSS averages, which were calculated the first year each test was administered. U.S. 4th and 8th grade students also appear to be better at reaching higher proficiency levels than the PIRLS and TIMSS medians. On PISA, average student achievement in the U.S. tends to be at or slightly under the OECD-country average, and U.S. 15-year-olds appear to be equal to or worse at reaching higher proficiency levels than the OECD average.

How does Tennessee fit? There have been several attempts to estimate average scores on international assessments for states, like Tennessee, that do not participate in any international assessments. The largest linking study connects 8th grade TIMSS with the domestic U.S. assessment NAEP. The most recent linking study (2011) reveals that Tennessee public school students likely perform below both the TIMSS average and U.S. public school average in math and above the TIMSS average and slightly above the U.S. public school average in science. The linking study also suggests that Tennessee public school students in 8th grade are better than the international median but similar to or worse than the U.S. average at reaching high proficiency levels in math and science. (This linking study does not reflect gains Tennessee students posted on 2015 NAEP science assessments relative to the national average.)

What else can the assessments tell us? There are a host of supplemental materials, including a variety of questionnaires and alternate assessments, available for education systems participating in any of these three international assessments. These supplemental materials provide additional information for the education system. For instance, from questionnaires, PISA reports conclude that the U.S. spends more per student than do most countries, socioeconomic status has a particularly significant impact on achievement in the U.S., and students in the U.S. describe being generally satisfied with their schools and indicate they have good student-teacher relationships. Additionally, U.S. 15-year-olds averaged slightly above the OECD average on the 2012 Problem Solving assessment and slightly below the OECD average on the 2012 Financial Literacy assessment.

Introduction

In August 2016, after almost two years of work, the International Education Study Group convened by the National Conference of State Legislatures (NCSL) published a report that examines high-performing education systems around the world, and the policies, practices, and lessons that might be gleaned from these systems and adopted by the United States and individual states. Meetings of the study group will continue into 2017 and are an example of policymakers' continuing interest in, and questions about, international assessments. This brief seeks to answer the following key questions about international assessments and their relevance to Tennessee:

- What are the main international assessments given to K-12 students?
- How does the U.S. perform on them?
- Do Tennessee students participate in international assessments, and how do they perform relative to the U.S. and other countries?
- What can international assessment results tell us about education in the U.S.?

This brief focuses on three of the largest international assessments: PIRLS, TIMSS, and PISA. Education systems (countries, regions, states, or cities) can choose to administer PIRLS for 4th graders, TIMSS for 4th graders, TIMSS for 8th graders, and/or PISA for 15-year-olds. This report focuses primarily on the most recent assessments for which data have been released: PIRLS 2011, TIMSS 2011, and PISA 2012.

Researchers urge policymakers to interpret international assessment results carefully and as one of several measures of educational performance. For example, social class inequality is higher in the U.S. than in many comparable countries that participate in international assessments, and there are more students from a low socioeconomic background in the U.S., both of which appear to be linked to generally poor international performance. One study found that when student socioeconomic status is taken into account, U.S. international rankings on one international assessment would have improved to 6th in reading and 13th in math (compared to the unadjusted rankings, which were 14th in reading and 25th in math). Additionally, one study found that, in general, U.S. students from low socioeconomic backgrounds have been improving in achievement over time, whereas comparable students in other countries tend to be slipping in achievement over time. Such examples illustrate that average scores and reported rankings on international assessments should be interpreted carefully and are one measure of education performance among others, such as equity, attainment, and citizenship.

What are the quick facts?

Table 1: Quick Facts about the Assessments

	PIRLS	TIMSS	PISA
Assessment Name	Progress in International Reading Literacy Study	Trends in International Mathematics and Science Study	Programme for International Student Assessment
Target Population	4th graders	4th and 8th graders	15-year-olds
Subject(s) assessed	Reading	Math and science	Reading, math, and science
Parent Organization	IEA	IEA	OECD
Content of Assessments	Literacy, curriculum, and instruction	Math and science curricula	Skills and knowledge, applications to real-life situations
Years of testing	2001, 2006, 2011, 2016*	1995, 1999, 2003, 2007, 2011, 2015*	2000, 2003, 2006, 2009, 2012, 2015*
Implementation	Pencil and paper tests, online extension starting 2016	Pencil and paper tests, tablet-based starting 2019	Pencil and paper tests, entirely computer-based starting 2015
Purpose	Measure trends in reading achievement and instructional practices	Improve teaching and learning of math and science	Evaluate education systems worldwide, allowing economies to track performance of their education systems over time
Most recent round of published results	2011	2011	2012
***Next publication date**	December 2017	November 2016	December 2016

Education systems that participate in PIRLS, TIMSS, and/or PISA are divided into groups. The "participating" jurisdictions/education systems are the primary focus of most reports and rankings. The participating jurisdictions are countries and a few cities. There are also "benchmarking" jurisdictions/education systems, including some U.S. states, which are subnational entities (regions, states, etc.). From a data standpoint, the benchmarking jurisdictions are identical to the participating jurisdictions, but the benchmarking jurisdictions are not included in most rankings. In this way, the benchmarking jurisdictions are considered different from the participating jurisdictions. Table 2 displays the number of education systems (countries and cities) and the benchmarking U.S. states that participated in the most recent round of testing.

Unlike PIRLS and TIMSS, PISA separates its participating education systems into two groups: OECD member countries and partner countries/education systems. While both groups are included in most reported results and rankings, scores are created based on the average performance of students in OECD member countries only. The U.S. has been an OECD member country since 1961.

Table 2: Participating Education Systems

	Countries/Systems	U.S. States
PIRLS 2011 (4th grade)	45	1
TIMSS 2011 (4th grade)	50	2
TIMSS 2011 (8th grade)	42	9
PISA 2012 (15-year-olds)	65*	3

*Of these, 34 are OECD countries, and 31 are partner countries/ education systems.

Table 3 shows the number of students and schools in the U.S. that made up each sample, including students and schools for the U.S. states that participated. If an education system chooses to participate in testing, test administrators select a certain number of schools and a certain number of students within those schools to comprise the sample. Different samples are drawn for the state samples and the nationally representative U.S. sample. Therefore, not every school in each system was selected to participate, and not every student in each selected school was asked to take the assessment. This is to done to minimize the cost (both time and money) of testing while still having a large enough sample from which to draw conclusions about the education system.

How does the US do?

The following three sections report U.S. results from the most recent published results of each assessment: PIRLS 2011, TIMSS 2011, and PISA 2012.

PIRLS 2011:

PIRLS scores students and education systems based on the average achievement in 2001, with the mean set to 500 and the standard deviation set to 100.[1] Basing the mean and standard deviation on a previous year's scores allows for a more meaningful comparison of scores over time.

Table 3: Sample Sizes

	Number of Students	Number of Schools
PIRLS 2011 (4th grade)		
U.S.	12,726	370
Florida	*2,598*	*77*
TIMSS 2011 (4th grade)		
U.S.	12,569	369
Florida	*2,661*	*77*
North Carolina	*1,792*	*46*
TIMSS 2011 (8th grade)		
U.S.	10,477	501
Alabama	*2,113*	*55*
California	*2,614*	*82*
Colorado	*2,167*	*53*
Connecticut	*2,099*	*62*
Florida	*1,712*	*60*
Indiana	*2,260*	*56*
Massachusetts	*2,075*	*56*
Minnesota	*2,500*	*55*
North Carolina	*2,103*	*59*
PISA 2012 (15-year-olds)		
U.S.	6,111	240
Public schools only:		
Connecticut	*1,697*	*54*
Florida	*1,896*	*55*
Massachusetts	*1,723*	*54*

In reading, the U.S. sample of 4th graders averaged 556 points, which is above the 500 PIRLS 2001 average. This places the U.S. in rank 6 out of 45 participating education systems. U.S. performance is comparable to Northern Ireland, Denmark, Croatia, Chinese Taipei, Ireland, and England. Average performance has increased by 14 score points since 2001 and by 16 score points since 2006. Florida averaged 569, which places it between Hong Kong (China; rank 1 out of 45) and the Russian Federation/Finland (tied for rank 2 out of 45).

[1] A mean is an average; all of the scores are added together and the sum is divided by the total number of scores. A standard deviation shows how spread out the data are; about 68 percent of the data used to create the mean (500) are within one standard deviation (100 points) of the mean.

Table 4 displays percentages at each proficiency level for the U.S. sample. There are higher percentages of U.S. students at the higher levels of proficiency and lower percentages of U.S. students at the lower levels of proficiency than the PIRLS median[2] percentages. **This suggests that U.S. students are better at reaching higher proficiency levels than the PIRLS median in reading at 4th grade.**

Table 4: PIRLS 2011 Proficiency Level Percentages

	Reading	
Level (Lower Limit)	*US% (International Median %)*	
Advanced (625)	17%	(8%)
High (550)	39%	(36%)
Intermediate (475)	30%	(36%)
Low (400)	12%	(15%)

TIMSS 2011:

TIMSS scores students and education systems based on the average achievement in 1995, with the mean set to 500 and the standard deviation set to 100.

In math, the U.S. sample of 4th graders averaged 541 points, which is above the 500 TIMSS 1995 average. This places the U.S. in rank 11 out of 50 participating education systems. U.S. performance is comparable to Finland, England, the Russian Federation, the Netherlands, and Denmark. Average performance has increased by 23 score points since 1995 and by 12 score points since 2007.

North Carolina averaged 554 in 4th grade math, which places it between Northern Ireland (rank 6 out of 50) and Flemish Belgium (rank 7 out of 50). Florida averaged 545, which places it equal to Finland (rank 8 out of 50).

In science, the U.S. sample of 4th graders averaged 544 points, which is above the 500 TIMSS 1995 average. This places the U.S. in rank 7 out of 50 participating education systems. U.S. performance is between the Chinese Taipei and the Czech Republic. Average performance has not changed significantly over time.

Florida averaged 545 in 4th grade science, which places it between the Russian Federation/ Chinese Taipei (tied for rank 5 out of 50) and the U.S. North Carolina averaged 538, which places it between the U.S. and the Czech Republic (rank 8 out of 50).

In math, the U.S. sample of 8th graders averaged 509 points, which is above the 500 TIMSS 1995 average. This places the U.S. in rank 9 out of 42 participating education systems. U.S. performance is comparable to Israel, Finland, England, Hungary, Australia, Slovenia, and Lithuania. Average performance has increased by 17 score points since 1995 but has not changed measurably since 2007.

[2] The median is the value that falls exactly in the middle if all values are lined up from smallest to largest.

Massachusetts averaged 561 in 8th grade math, which places it between Japan (rank 5 out of 50) and the Russian Federation (rank 6 out of 50). Minnesota averaged 545, which also places it between Japan and the Russian Federation. North Carolina averaged 537, which places it between the Russian Federation and Israel (rank 7 out of 50). Indiana averaged 522, which also places it between the Russian Federation and Israel. Colorado and Connecticut averaged 518, which also places them between the Russian Federation and Israel. Florida averaged 513, which places it between Finland (rank 8 out of 50) and the U.S. California averaged 493, which places it between Italy (rank 15 out of 50) and New Zealand (rank 16 out of 50). Alabama averaged 466, which places it between Armenia (rank 21 out of 50) and Romania (rank 22 out of 50).

In science, the U.S. sample of 8th graders averaged 525 points, which is above the 500 TIMSS 1995 average. This places the U.S. in rank 10 out of 42 participating education systems. U.S. performance is comparable to England, Hungary, Australia, and Israel. Average performance has increased by 12 score points since 1995 but has not changed measurably since 2007.

Massachusetts averaged 567 in 8th grade science, which places it between Singapore (rank 1 out of 50) and the Chinese Taipei (rank 2 out of 50). Minnesota averaged 553, which places it between Japan (rank 4 out of 50) and Finland (rank 5 out of 50). Colorado averaged 542, which places it equal to the Russian Federation (rank 7 out of 50). Indiana averaged 533, which places it equal to England (rank 9 out of 50). Connecticut and North Carolina averaged 532, which places them between England and the U.S. Florida averaged 530, which also places it between England and the U.S. California averaged 499, which places it between the Ukraine/Italy (tied for rank 17 out of 50) and Norway (rank 19 out of 50). Alabama averaged 485, which places it between Kazakhstan (rank 20 out of 50) and Turkey (rank 21 out of 50).

Table 5 displays percentages at each proficiency level, grade, and subject for the U.S. sample. There are higher percentages of U.S. students at the higher levels of proficiency and lower percentages of U.S. students at the lowest level of proficiency than the TIMSS median percentages. **This suggests that U.S. students are better at reaching higher proficiency levels than the TIMSS median in math and science at 4th and 8th grades.**

Table 5: TIMSS 2011 Proficiency Level Percentages

	4th Math		4th Science		8th Math		8th Science	
Level (Lower Limit)	*US% (International Median %)*							
Advanced (625)	13%	(4%)	15%	(5%)	7%	(3%)	10%	(4%)
High (550)	34%	(24%)	34%	(27%)	23%	(14%)	30%	(17%)
Intermediate (475)	34%	(41%)	32%	(40%)	38%	(29%)	33%	(31%)
Low (400)	15%	(21%)	15%	(20%)	24%	(29%)	20%	(27%)

PISA 2012:
While TIMSS and PIRLS scores are based on all education systems, PISA scores are based on achievement in OECD countries only. The average achievement of all OECD countries is set at 500 each year with a standard deviation of 100.

In math, the U.S. sample of 15-year-olds averaged 481 points, which is below the 500 OECD-country average. This places the U.S. in rank 27 out of 34 OECD countries and rank 36 out of the 65 participating education systems. U.S. performance is comparable to Hungary, Italy, Lithuania, Norway, Portugal, Russia, Slovakia, Spain, and Sweden. Average performance has not changed significantly over time.

Massachusetts averaged 514 in math, which places it equal to Germany (rank 16 out of 65). Connecticut averaged 506, which places it equal to Austria (rank 18 out of 65). Florida averaged 467, which places it between Croatia (rank 40 out of 65) and Israel (rank 41 out of 65).

PISA reports that U.S. students do poorly with mathematics tasks that require a higher cognitive demand. They have little motivation or interest in learning math but more confidence in their abilities than their peers in other OECD countries. Students in top-ranked Shanghai (China) perform about two years of schooling ahead of Massachusetts students in math.

In reading, the U.S. sample of 15-year-olds averaged 498 points, which is not statistically different from the 500 OECD-country average. This places the U.S. in rank 17 out of 34 OECD countries and rank 24 out of the 65 participating education systems. U.S. performance is comparable to Austria, the Czech Republic, Denmark, France, Hungary, Israel, Italy, Norway, Portugal, the United Kingdom, and Vietnam. Average performance has not changed significantly over time.

Massachusetts averaged 527 in reading, which places it between South Korea (rank 5 out of 65) and Finland (rank 6 out of 65). Connecticut averaged 521, which places it between Canada/ Chinese Taipei (tied for rank 8 out of 65) and Poland (rank 10 out of 65). Florida averaged 492, which places it between the Czech Republic (rank 19 out of 65) and Italy/Austria (tied for rank 20 out of 65).

In science, the U.S. sample of 15-year-olds averaged 497 points, which is not statistically different from the 500 OECD-country average. This places the U.S. in rank 20 out of 34 OECD countries and rank 28 out of the 65 participating education systems. U.S. performance is comparable to Austria, Belgium, Croatia, Denmark, France, Hungary, Italy, Latvia, Lithuania, Luxembourg, Norway, Portugal, and Spain. Average performance has not changed significantly over time.

Massachusetts averaged 527 in science, which places it between Vietnam (rank 8 out of 65) and Poland (rank 9 out of 65). Connecticut averaged 521, which places it equal to Australia (rank 16 out of 65) and Macao (China; rank 17 out of 65). Florida averaged 485, which places it equal to Sweden (rank 38 out of 65).

Table 6 displays percentages at each proficiency level and subject for the U.S. sample. There are equal or lower percentages of U.S. students at the higher levels of proficiency and equal or higher percentages of U.S. students at the lowest levels of proficiency than the OECD average percentages. **This suggests that U.S. students are equal to or worse at reaching higher proficiency levels than the OECD average in all three subjects when students are approximately 15 years old.**

Table 6: PISA 2012 Proficiency Level Percentage

	Math		Reading		Science	
Level (Lower Limits)*	*US% (OECD average %)*					
Level 6 (669-708)	2%	(3%)	1%	(1%)	1%	(1%)
Level 5 (607-633)	7%	(9%)	7%	(7%)	6%	(7%)
Level 4 (545-559)	16%	(18%)	20%	(21%)	19%	(21%)
Level 3 (480-484)	23%	(24%)	31%	(29%)	29%	(29%)
Level 2 (407-420)	26%	(23%)	25%	(24%)	27%	(25%)
Level 1 (262-358)	18%	(15%)	16%	(17%)	14%	(13%)
Below Level 1	8%	(8%)	1%	(1%)	4%	(5%)

*Each subject (math, reading, science) has a different lower limit.

How does Tennessee fit?

While Tennessee has not, as of yet, participated in any of these international assessments as a subnational entity/ benchmarking jurisdiction, there have been several studies that have attempted to estimate state scores by linking international assessments with domestic ones, such as the National Assessment of Education Progress (NAEP). For instance, a study associated with the Harvard Kennedy School linked NAEP 2007 with PISA 2009 to roughly track the class of 2011. The researchers concluded that, in math, Tennessee ranked an estimated 42nd (out of 50 states and D.C.) in percent of proficient students, with scores similar to Croatia, Greece, Israel, Russia, and Turkey. In reading, Tennessee ranked an estimated 39th in percent of proficient students, with scores similar to Greece, Hungary, Israel, Italy, and Portugal. The linking study that exists at the largest scale, however, is sponsored by the National Center for Education Statistics (NCES) and links NAEP with TIMSS.

The passage of No Child Left Behind brought a federal requirement for every state receiving Title I funding to participate in NAEP, also known as the Nation's Report Card. The first national NAEP assessments were administered in 1969, and optional state assessments became available in 1990. Now, NCES administers the state assessments, primarily focused on math, reading, science, and writing for public school students in grades 4 and 8, approximately every two years.

The 2011 NAEP-TIMSS Linking Study is the fourth of its kind, the first of which linked 1995 TIMSS with 1996 NAEP. The goal of these linking studies is to estimate grade 8 public school TIMSS math and science scores for every U.S. state without having to pay for each state to take TIMSS. In 2011, students from the nine validation states took both TIMSS and NAEP assessments. NCES then used these data to estimate TIMSS scores for the remaining U.S. systems (including District of Columbia (D.C.) Public Schools and Department of Defense Education Activity (DoDEA)). TIMSS scores center around 500, the mean achievement of participating education systems in 1995, and have a standard deviation of 100.

In math, Tennessee's estimated public school TIMSS 2011 score is 490, compared to the U.S. public school score of 507. There were five other states with average (estimated and actual) scores statistically below the 500 TIMSS 1995 average. State average scores ranged from 466 in Alabama to 561 in Massachusetts, and Tennessee scored above three U.S. systems: D.C., Mississippi, and Alabama.

Table 7 displays estimated percentages at each TIMSS proficiency level in math for public school students in Tennessee, as compared to actual percentages for the U.S. public school sample and the international median (full sample). **The table suggests that Tennessee students are below the U.S. average but above the international median at reaching higher proficiency levels in math when the students are in 8th grade.**

In science, Tennessee's estimated public school TIMSS 2011 score is 524, compared to the U.S. public school score of 522. There were 46 other states with average (estimated and actual) scores statistically above the 500 TIMSS 1995 average. State average scores ranged from 453 in D.C. to 567 in Massachusetts, and Tennessee scored above 15 systems and equal to one, Texas.

Table 7: NAEP-TIMSS 2011 Estimated Proficiency Level Percentages: Math

	8th Math		
Level (Lower Limit)	*TN%*	*US%*	*International Median %*
Advanced (625)	4%	6%	3%
High (550)	17%	23%	14%
Intermediate (475)	37%	38%	29%
Low (400)	30%	25%	29%

*The Tennessee and U.S. percentages are based on public school students only; the international median includes the full sample of students.

Table 8 displays estimated percentages at each TIMSS proficiency level in science for public school students in Tennessee, as compared to actual percentages for the U.S. public school sample and the international median (full sample). **The table suggests that Tennessee students are about the same as the U.S. average but above the international median at reaching higher proficiency levels in science when the students are in 8th grade.**

The 2015 NAEP results, released in 2016, show that Tennessee 4th and 8th grade students increased their science scores more than the national average. It is not known how these results may impact any future linking study results.

Table 8: NAEP-TIMSS 2011 Estimated Proficiency Level Percentages: Science

	8th Science		
Level (Lower Limit)	*TN%*	*US%*	*International Median %*
Advanced (625)	10%	9%	4%
High (550)	29%	30%	17%
Intermediate (475)	34%	34%	31%
Low (400)	20%	20%	27%

*The Tennessee and U.S. percentages are based on public school students only; the international median includes the full sample of students.

What else can the assessments tell us?

Each of these three assessments has a host of supplemental materials, displayed in Table 9, that education systems can opt into administering to students and other parties of interest.

Table 9: Optional Supplemental Materials

	PIRLS	TIMSS	PISA
Questionnaires			
Student	X	X	X
Home/Parent	X	X	X
Teacher	X	X	
School/Principal	X	X	X
National /Curriculum	X	X	X
Computer Familiarity			X
Educational Career			X
Student Assessments			
Problem Solving			X
Financial Literacy			X
Advanced (12th Grade)*		X	
Numeracy		X	

*The U.S. did not participate in TIMSS Advanced 2008.

The questionnaires can be a rich source of information for policymakers and researchers. For instance, a researcher from Vanderbilt University used PISA data to study the efficiency of schools (spending versus educational results) and found that schools in the U.S. are generally considered less efficient than those in many industrialized countries except when studying citizenship or when taking into account the amount of time spent on instruction outside of school (such as private tutoring).

PISA reports constructed from questionnaire data reveal that the **U.S. spends more per student than do most countries**, which is in part a reflection of the amount of money per capita the U.S. spends on education. They also report that **socioeconomic status (SES) has a particularly significant impact on achievement in the U.S.**, though there is no apparent difference in student-teacher ratios or teacher qualifications between advantaged and disadvantaged schools in the U.S., according to the PISA sample. It is important to note, however, that no apparent differences in student-teacher ratios or teacher qualifications does

not mean there are no other differences between disadvantaged and advantaged schools that may lead to achievement gaps.

Students in the U.S. describe being generally satisfied with their schools and indicate they have good student-teacher relationships.

The U.S. participated in PISA's new Problem Solving and Financial Literacy assessments, offered for the first time in 2012. Twenty-eight OECD countries, including the U.S., participated. PISA 2012 defines problem solving as "an individual's capacity to engage in cognitive processing to understand and resolve problem situations where a method of solution is not immediately obvious." **U.S. 15-year-olds scored 508 on the Problem Solving assessment, slightly above the 500 OECD average.** However, U.S. students perform significantly better on problem solving questions than do their peers in countries with similar levels of math, reading, and science achievement. Males and females in the U.S. perform about the same on the problem solving tasks, though there are more males than females at the higher levels of achievement.

Including the U.S., 18 education systems participated in the Financial Literacy assessment. PISA defines financial literacy as "knowledge and understanding of financial concepts and risks, and the skills, motivation and confidence to apply such knowledge." **U.S. 15-year-olds performed slightly below the 500 OECD average on the Financial Literacy assessment, scoring a 492.** Male and female students perform similarly, and students who have one or more parents in a skilled or finance-related occupation perform markedly better on the Financial Literacy assessment. Financial literacy is strongly related to math and reading performance in the U.S. among 15-year-olds. Of participating systems, the U.S. has the largest gap in whether a student has a bank account by SES: approximately 32 percent of disadvantaged students have a bank account, compared to 70 percent of advantaged students.

Additional Resources

Overall, PIRLS, TIMSS, and PISA can provide a wealth of information when used by informed parties who acknowledge that raw numbers are not the whole story and that there is more information available than math, reading, and science averages. For more information and easy-to-use databases for PIRLS, TIMSS, PISA, and other international tests, see the NCES website.

International Activities Homepage:
http://nces.ed.gov/surveys/international/

Progress in International Reading Literacy Study (PIRLS):
http://nces.ed.gov/surveys/pirls/

Trends in International Mathematics and Science Study (TIMSS):
http://nces.ed.gov/timss/

TIMSS-NAEP Linking Study:
http://nces.ed.gov/timss/naeplink.asp

Programme for International Student Assessment (PISA):
http://nces.ed.gov/surveys/pisa/

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